What is claimed is:

1. A method for determination of a zero error in a Coriolis gyro (1') in which:

-the resonator (2) of the Coriolis gyro (1') has appropriate disturbance forces applied to it such that at least one natural oscillation of the resonator (2) is stimulated, which differs from the stimulating oscillation and from the read oscillation of the resonator (2), and

- a change in a read signal which represents the read oscillation and results from the stimulation of at least one natural oscillation is determined as a measure of the zero error.

2. The method as claimed in claim 1, characterized in that the disturbance forces are alternating forces at appropriate disturbance frequencies, with the disturbance frequencies of the resonator (2).

3. The method as claimed in claim 2, characterized in that the change in the read signal is recorded by subjecting the read signal to a demodulation process based on the disturbance frequencies.

4. The method as claimed in one of claims 1 to 3, characterized in that the zero error contribution which is produced by one of the at least one natural oscillations is determined by determination of the strength of the corresponding change in the read signal, determination of the corresponding resonance Q-factor of the natural oscillation and by calculation of the determined strength and resonance Q-factor.

5. The method as claimed in claim 4, characterized in that the resonance Q-factor of a natural oscillation is determined by detuning the corresponding disturbance frequency while at the same measuring the change produced by this in the read signal.

6. The method as claimed in one of the preceding claims, characterized in that two or more successive natural oscillations of the resonator (2) are stimulated, corresponding changes in the read signal are recorded, and corresponding zero error contributions are determined, with the zero error of the Coriolis gyro (1') being determined by addition of the zero error contributions.

7. A Coriolis gyro (1') characterized by a device for determination of the zero error of the Coriolis gyro (1') having:

- a disturbance unit (27) which applies appropriate disturbance forces to the resonator (2) of the Coriolis gyro (1') such that at least one natural oscillation of the resonator (2 is stimulated, which differs from the stimulating oscillation and the read oscillation of the resonator (2), and
- a disturbance signal detection unit (26, 28, 29, 30, 31), which determines a disturbance component, which is contained in a read signal that represents the read oscillation and has been produced by the stimulation of the at least one natural oscillation, as a measure of the zero error.

8. The Coriolis gyro (1') as claimed in claim 7, characterized in that the disturbance signal detection unit comprises two demodulators (28, 29), which operate in quadrature with respect to one another, two low-pass filters (31, 31) and a control and evaluation unit (26), with the demodulators (28, 29) being supplied with the read oscillation tapped-off signal, with the output signals from the two demodulators (28, 29), being filtered by in each case one of the low-pass filters (30, 31), and with the output signals from the low-pass filters (30, 31) being supplied to the control and evaluation unit (26), which determines the zero error on this basis.

9. The Coriolis gyro (1') as claimed in claim 8, characterized in that the control and evaluation unit (26) acts on the disturbance unit on the basis of the signals supplied to it, by which means the frequencies of the disturbance forces can be controlled by the control and evaluation unit (26).